

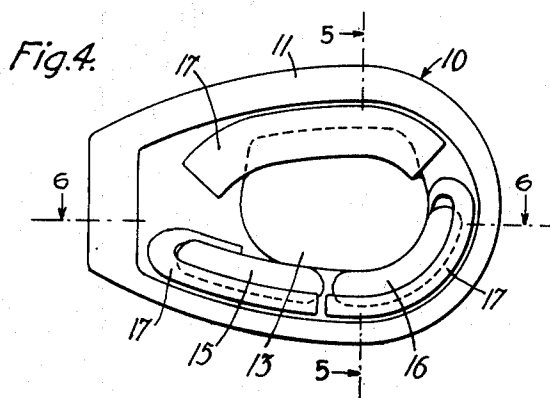
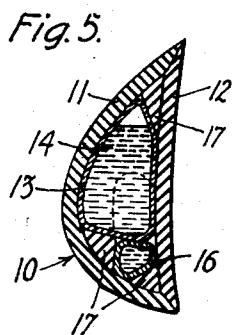
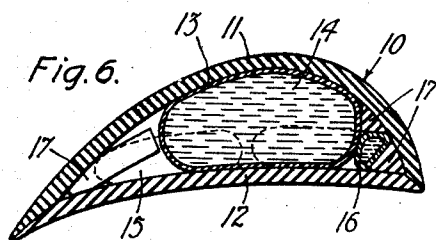
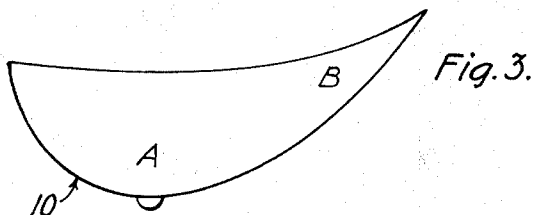
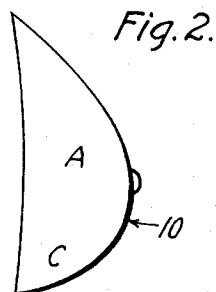
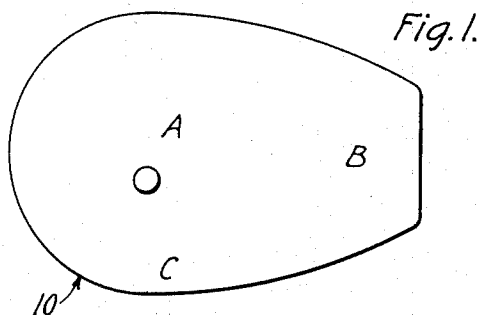
April 28, 1953

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ARTIFICIAL BODY BULGE

2,636,182

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3 Sheets-Sheet 1



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Fig. 7.

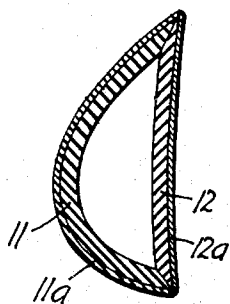


Fig. 7a.

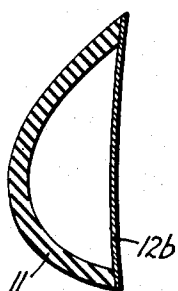


Fig. 7b.

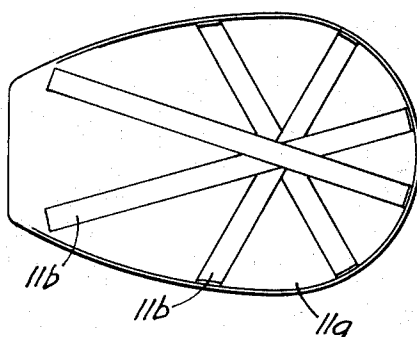


Fig. 8.

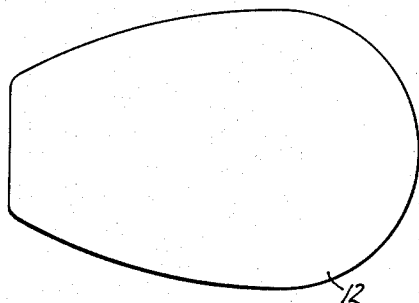


Fig. 8a.

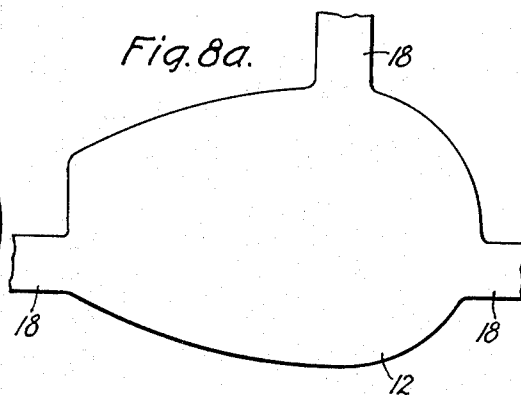


Fig. 9.

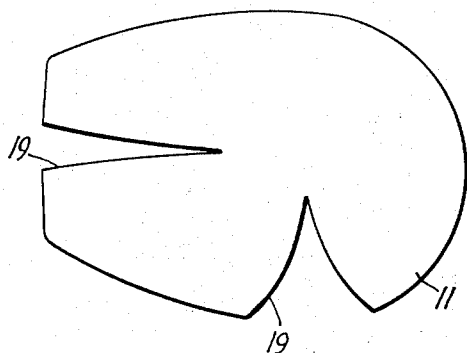


Fig. 11.

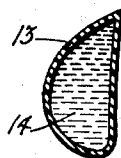


Fig. 11a.



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Fig. 10.

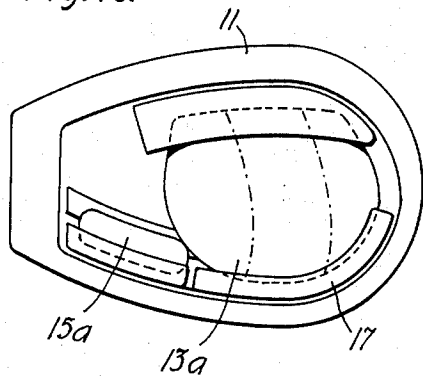


Fig. 10a

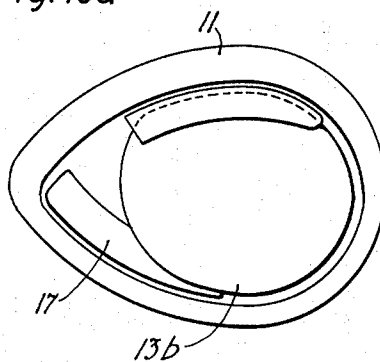


Fig. 10b.

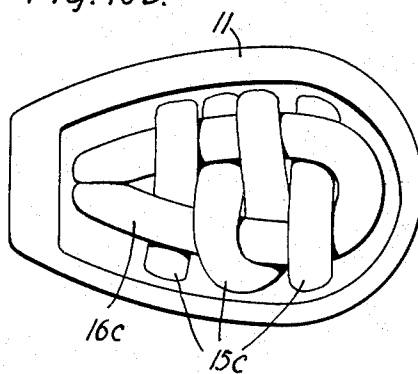
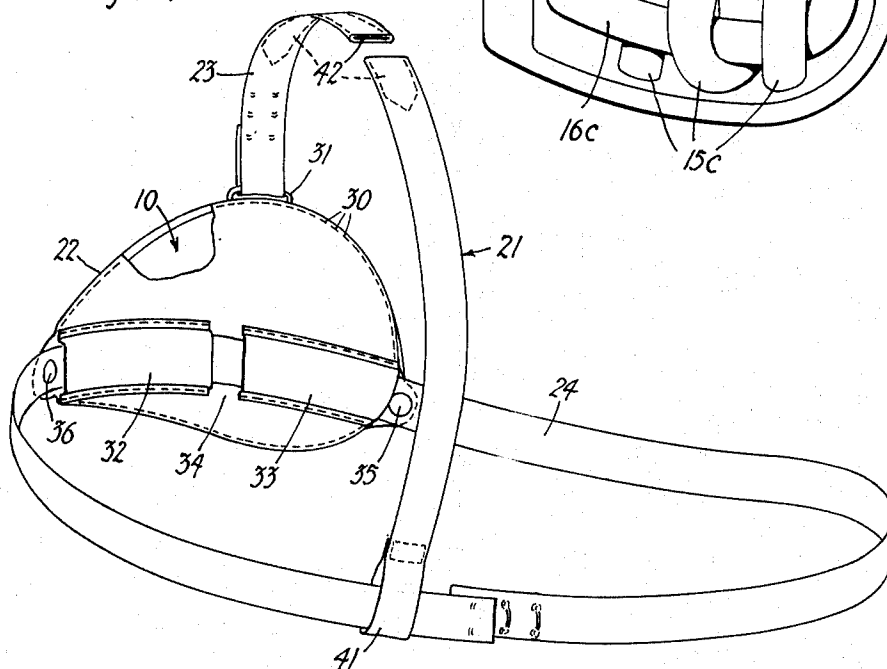


Fig. 12.



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UNITED STATES PATENT OFFICE

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ARTIFICIAL BODY BULGE

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3 Claims. (Cl. 2-267)

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This invention relates to artificial bulge-forming members for the human body. Items of this kind are intended to resemble in shape and softness natural soft bulges of the human body. They may be used to effect a bulge shape in the absence of a natural bulge or to merely give a modified or enlarged apparent shape to an already present natural bulge.

Such artificial bulge-forming members have found a much appreciated use in replacement of women's breasts which have been removed because of some sickness. In the case of one breast having been removed it is of course desirable that the artificial bulge-forming member replacing it should resemble the remaining natural breast both in respect of size and shape and also in respect of weight and softness to touch.

It is an object of the invention to produce an artificial bulge-forming member of the character described which may be of any desired size and shape and any desired weight and softness, but which furthermore will give an effect through clothing of being live and quick to the touch.

It is a further object to produce such an artificial bulge-forming member in which the effect of being live and quick to the touch may be made to simulate these effects in an individual natural body bulge.

The importance of these objects may readily be realized by consideration of the obviously different internal and external structures of the breasts of different women, such as young, mature or aged women, women before and after childbirth, and slim or stout women. Thus there may be taut tendons particularly in the under part and sides holding the breasts high, or the tendons may be greatly relaxed, which may readily be noticed by touch.

The breast may be lean and firm, or it may include considerable fat which will give an effect of extreme softness. Also the glands in the breast may be in active or decaying state.

These conditions furthermore result in different degrees of liveness in a breast, which perhaps is to be found in the quickness of shifting and the counter-pressure exerted, when the breast is lifted or compressed by touch. This effect of liveness and its suitable adjustment in an artificial breast to resemble the other remaining breast are important objects of my invention.

A more complicated and frequently occurring condition to be met in this art is that in which the artificial breast is required to resemble a breast having its own natural structure but being held in an artificially effected position by a brassiere.

It has been difficult to reproduce these special effects in an artificial breast answering the more fundamental requirements. All these conditions can however be closely reproduced to any desired degree in the practice of my invention.

It should of course be understood that the invention is not limited to replacing lost breasts but is also applicable for emphasizing underdeveloped breasts, or for replacing any other protuberant portion of the human body.

It is a still further object to provide a mounting or harness for such a breast which is capable of carrying the weight of the bulge-forming member with a minimum of discomfort to the person and which is independent of and additional to the usual brassieres thereby permitting the wearing of the breast under all conditions, such as with a nightgown or even a swimming suit.

In accordance with a principal feature of the invention the artificial bulge-forming member includes a shell or casing which itself is soft but tends to retain its shape against a weight or pressure and which contains a quantity of material of the nature of a viscous liquid. I have found that this combination of a semi-rigid shell with a semi-fluid can be made to answer the more fundamental requirements very successfully by simple proportioning.

In accordance with a more specific feature the interior of the casing is subdivided into chambers which may or may not be of different sizes and shapes and each chamber contains a suitable quantity of the viscous liquid or of liquids having different degrees of viscosity. Thus by the different sizes and locations of the chambers different tendencies of shifting may be reproduced and by the different degrees of viscosity varying effects of liveness may be secured.

In accordance with an alternative feature the front of the casing may be covered with a comparatively thin layer of extra soft material resembling the skin of a breast.

In accordance with a further feature of the invention a detachable and adjustable harness is provided for holding the breast firmly in the correct position without deformation of the breast. The shoulder strap is reenforced with a padding for easing the weight and the girdle strap is threaded through suitable guides on the back of the breast.

In the following detailed description reference will be made to the accompanying drawings which show a specific embodiment of the invention and certain modifications thereof. It should however be understood that the invention

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may take other forms and may be varied in respect of arrangement, shape and dimensions as well as in choice of materials within the scope of the invention, as defined in the claims.

In the drawings:

Figs. 1, 2 and 3 show in elevation front, side and top views, respectively, of an artificial bulge-forming member shaped to simulate a woman's breast;

Fig. 4 is a rear view of the bulge with the rear wall removed;

Fig. 5 is a cross sectional view along the line 5-5 in Fig. 4, showing a preferred internal arrangement;

Fig. 6 is a cross sectional view along the line 6-6 in Fig. 4;

Fig. 7 is a view similar to Fig. 5 showing a modified wall construction;

Fig. 7a is a view similar to Fig. 7 showing another modified wall construction;

Fig. 7b is rear view of a front wall with reinforcement;

Fig. 8 is rear plan view of the rear wall used in the bulge shown in Fig. 1;

Fig. 8a is a rear plan view of a modified rear wall;

Fig. 9 is a plan view of a front wall in an intermediate stage of manufacture;

Fig. 10 is a view similar to Fig. 4 showing another internal arrangement;

Figs. 10a and 10b are views similar to Fig. 4 showing still other arrangements;

Figs. 11 and 11a are cross sectional views of differently formed internal bags and

Fig. 12 is a perspective view of a mounting or harness for holding a bulge-forming member, such as that shown in Figs. 1, 2 and 3, in position on a person.

As shown in Figs. 1, 2 and 3 the bulge-forming member 10 has a front surface which is shaped to simulate the front of a woman's breast, in this case the left, and has a rear surface which is shaped to fit the chest proper from which it is presupposed that the breast has been removed.

It will be noted that the bulge-forming member usually, and as shown here, has a forward portion A of considerable depth between front and rear surfaces and has a sideways extending portion B, reaching well under the arm, which tapers off in depth, in simulation of a natural breast. It is in the portion A that the present bulge-forming member must simulate a certain degree of softness combined with what might be termed a tension of liveness in a natural breast which seems to act toward quick restoration of the original form upon removal of an external pressure.

In the under part C of portion A and in portion B the softness appears to be combined with a supporting tension as of tendons or muscles located in these areas and more or less effective in holding the portion A in raised position depending upon the individual case. It should further be noted that the main weight of material in the bulge-forming member must be placed with convincing similitude within the portion A.

As illustrated in Figs. 4, 5 and 6 the bulge-forming member 10 comprises a a dished front wall 11 closed by a surface-conforming rear wall 12 which together constitute a shell or casing preformed to present the shape shown in Figs. 1, 2 and 3. In the deepest portion of the interior, corresponding to portion A, a comparatively large oval-shaped bag 13 containing a liquid 14 is suitably fastened and in the lower portions of the

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interior, corresponding to the portions B and C, smaller oblong bags 15 and 16, also containing a liquid, are suitably fastened. Spaces intervening between the different bags and between the bags and the walls of the container are more or less filled with strip material 17, 17.

The material of the front wall of the casing should be soft to the touch, compressible, flexible and elastic enough to have a definite tendency to retain its shape under the weight of the internal elements and to restore its original shape upon deformation.

Alternatively, and as shown in Fig. 7 the front wall may be constructed of two materials in two layers, the material in the inner layer 11 being firm enough to support the weight of the interior parts without giving undue stiffness to the front of the breast and the material in the outer layer 11a being soft to resemble human skin. This skin layer may be reenforced by adhesive tape 11b placed against the inside surface (see Fig. 7b) when a certain degree of firmness is required.

The strip material 17, 17 may be the same as the material of the front wall, and may be disposed to serve as strengthening members for the front wall, particularly effective in helping to carry the weight of the deep portion A of the bulge-forming member 10 with its large quantity of liquid. The strips 17 may of course be reenforced by fabric material, such as linen or light canvas, placed adjacent thereto or secured in any suitable manner, as by wrapping or cementing. These strips and their eventual reinforcement may be fastened to the casing at their ends only or they may form a more intimate part of the front wall by being fastened thereto along their entire length, as by cementing, depending on the individual requirements.

The rear wall may be of the same material and thickness as the front wall, in which instance the casing may be formed in one piece, as by casting, with an opening along the upper edge along portion A for insertion of the interior elements. However, as indicated in Figs. 5 and 6, the two walls may be made separately and with beveled edges which may be cemented together.

The rear wall may in either case be reenforced, as indicated in Fig. 7, by a backing 12a of fabric, such as linen, silk, or nylon which backing may further be combined with a layer of canvas or the like, the softer materials being for contact with the skin. The rear wall may furthermore be entirely comprised of more or less inelastic material, 12b as indicated in Fig. 7a, in which case it may serve as a fairly rigid mounting piece for the remaining elements of the bulge.

Depending on these different constructions, the breast may be attached to the chest in different manners. Thus the breast may be placed in one cup of a brassiere, which may hold it in position similar to the natural companion breast, in which case the rear wall of the article 10 would be shaped as shown in Fig. 8. The article 10 may, however, be provided with straps for holding it in place, in which case the rear wall may be shaped as shown in Fig. 8a with integral extensions 13 either for attachment of such straps or of sufficient length to serve as straps. In this latter case the rear wall should of course be of the more rigid construction so that it may support the tension in the straps without deformation of the front part of the article 10.

The material of the front wall may be latex, natural or synthetic rubber or some other plastic and should preferably be of the kind known as

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foam, with fine bubbles throughout. The front wall may of course be cast in a few standard shapes and sizes, which may be sufficiently modified by trimming and mounting to make it conform to various individual companion breasts. Or the front wall may be cut from plate-material and by incisions and cementing shaped as required. One example of such incisions 19 are shown in Fig. 9.

The internal bags 13, 15 and 16 together with the strip material 17 may be distributed in different ways depending mainly on the required shape but also to a large extent on the required distribution of softness and tension.

Different distributions are shown in Figs. 4, 10, 10a and 10b. Thus a comparatively large bag 13 may be placed to fit into the front wall 11. As shown in Fig. 4, some resemblance of tendons combined with softness along the entire lower line of the breast is secured by placing the tubular bags 15 and 16 end to end with strip material 17 alongside thereof below the larger bag 13, thereby giving the appearance of a naturally raised breast, see Fig. 5. As shown in Fig. 10, the bag 13a completely occupies the deep portion A, except for some strip material, thereby giving the appearance of a fuller and more sagging breast than that shown in Fig. 5. By the use of a comparatively thin front wall of only slightly rigid material for this distribution, an uplift may be secured by a brassière, which will closely simulate the condition of the natural breast. Fig. 10a shows the use of a single large bag, suitable for simulating a breast which does not extend appreciably in under the arm.

Fig. 10b shows an arrangement which includes a long bag 16c, disposed with one or two or more horizontal portions which may be intertwined with some or all of the vertical bags 15c.

The bags are of thin but strong, highly pliable rubber-like material. They should be completely leak-proof and securely sealed after the liquid has been introduced.

The liquid may be the same in all the bags, but the properties of that in the larger bags are more important. The specific gravity of all the solid materials of the article 10 being somewhat lower than that of human flesh it is essential that the liquid 14 at least in the larger bag be heavier than human flesh.

Certain liquids, such as heavy soap solutions, glycerin, etc., have a satisfactory weight in themselves and they may also have the required viscosity to make them shift under applied pressure with the live resistance of glands and fatty deposits in certain breasts. It has however been found that these requirements may be met or even enhanced by certain mixtures. Thus immiscible liquids, like heavy oil and water, will have a desirable double effect of resistance and liveness, at the same time giving added weight. A mixture of a liquid and an insoluble solid in the form of grain, pellets, coarse powder or even threads and slivers will have a similar double effect. It is of course essential that the materials in the bags and the liquids should be mutually non-reacting.

In one preferred form a suitable liquid is obtained by the use of a commercial grade of sodium derivative, such as a sodium alginate, to which is added enough water to effect the desired viscosity, and enough powdered clay to secure the desired specific gravity. When natural water is used a disinfectant should be added.

A manner of further controlling the range of

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softness is available in the extent to which particularly the large bag is filled with liquid. Thus the bag may be completely filled even to a slight stretching of the bag, as shown in Fig. 11, in which case the bag will give great firmness to the bulge. Or the bag may be partly filled with the liquid, as shown in Fig. 11a, the remaining space being empty or containing air, in which case the bag will simulate a tendency to sagging. The bag should however occupy at least one third of the interior space of the bulge.

The bags should be of material tough enough to resist accidental piercing which holds also for the front wall. The liquid component may be highly volatile or quickly coagulating to prevent excessive escape of liquid in case of accidental rupture. To aid in reducing such escape the large bag 13 may be sectionalized or even cellular or may be made up of a few bags fitting together to make up the shape of the large bag, as indicated by dotted lines in Fig. 10. The arrangement of vertical small bags shown in Fig. 10b is particularly suitable for this purpose.

An alternative arrangement for mounting the artificial breast on the body is illustrated in Fig. 12 as viewed from the back. The arrangement is in the form of a harness 21 which includes a pocket permanently enclosing the breast bulge-forming article 10, a vertical shoulder strap 23 for adjustably fixing the vertical position of the breast and a horizontal girdle strap 24 for holding the breast close to the body.

The pocket 22 is of strong soft fabric, is fitted tightly about the breast 10 and is stitched along the edge, as shown at 30. An oblong loop 31 is sewed into the upper edge of the pocket. On the rear surface of the pocket and well below the horizontal centerline thereof a pair of hollow guide pieces or sheathings 32 and 33 are sewed in position to be in alignment and separated by a small space 34.

The girdle strap 24 is made of any fabric suitable for the purpose. Thus it should be reasonably strong to permit tightening about the body sufficiently to prevent the breast from flapping, for example during walking. It should also be sufficiently elastic to permit free expansion for breathing. This strap is passed through the guide pieces 32 and 33 and is adjustably closed by hooks and mallots or other conventional means on the back of the body. A snap button 35 between a small flap or ridge of the pocket 22 and the front part of the strap 24 serves to fix the location of the pocket on the strap. The portion of the strap lying along the back of the pocket may be reinforced by inelastic material to prevent stretching of the pocket, in which case another snap button 36 similar to the button 35 may be placed at the opposite edge of the pocket for further fastening of the pocket to the strap.

The shoulder strap 23 may be of the same material as the girdle strap 24, or it may be of a less elastic fabric. This strap has a loop 41 drawn over one end of the girdle strap on the back of the wearer for easy adjustment in positioning the breast. On the front the strap is pulled through the loop 31 on the pocket and brought upward for adjustable fastening on itself by hook and mallots or any other conventional means. The shoulder strap may be reinforced and softened by means of a strip of material 42 located over the shoulder and covered, at least on the underside by the fabric of the strap. One purpose is to soften and distribute

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the pressure due to the heavy weight of the bulge-forming article 10, and another purpose is to prevent the strap from crinkling.

By means of a harness of this type the artificial breast is made independent of other clothing, such as brassières, nightgowns, and swimming suits and thus may be worn at all times, even while dressing and undressing, or while wearing negligees or sport outfits.

What is claimed:

1. An artificial bulge-forming member for a human body comprising a casing having the outer desired form of a breast; said casing comprising a dish front wall closed by a body-conforming rear wall, a closed pliable bag within said casing and a quantity of viscous liquid contained in said bag to force said bag into substantial conformity with the adjacent portions of said front and rear walls; said front wall being flexible and comprised of a comparatively heavy inner layer of material having the softness when touched resembling the softness of human flesh, an outer layer of material having the feel when touched resembling the feel of human skin when touched and strips of relatively stiffer material cemented on the inner layer and positioned between said inner and outer layers, adapted to serve as reinforcement to said outer layer and lend said outer layer shape-retaining quality.

2. An artificial bulge-forming member for a human body comprising a casing having a predetermined outer form, a plurality of closed pli-

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able bags within said casing and a quantity of viscous liquid contained in each of said bags to force said bags into substantial conformity with the adjacent portions of the casing; said bags being of elongated form and arranged in intertwined relation; at least the front wall of said casing being of shape-conforming material; said casing having a front and a rear wall joined around their rims.

3. An artificial bulge-forming member for a human body comprising a casing having a predetermined outer form, a few closed bags of pliable material positioned within said casing and a quantity of viscous liquid contained in each of said bags to force said bags into substantial conformity with the inner walls of the casing and flexible strip members filling the spaces between said bags and between said bags and the casing walls; said casing being of shape conforming material.

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